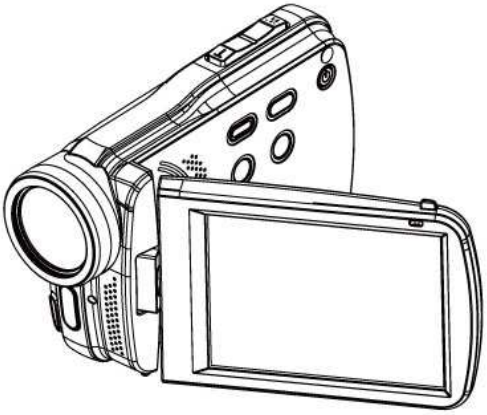
User's Manual



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Thank you for purchasing this Digital Video Camera. Please make sure to read this manual thoroughly before using it and keep this manual in a safe place for future reference.

Disclaimer

This company will endeavor to make sure the contents of this manual are correct and up to date. However, we do not guarantee the accuracy of the contents of this manual. In case there is any discrepancy between this manual and the Digital Video Camera, please use this camera as the basis. We reserve the right to change any content or technical rule without prior notification. In addition, the manufacturer reserves the right to change technical specifications and package contents without prior notification.

Preface

Congratulations on your purchase of this advanced camcorder (digital video camera). Ensure that you read this manual carefully and keep it in a safe place for future reference.

About This Manual

This manual is designed to assist you in using your new camcorder. All information presented is as accurate as possible but is subject to change without notice.

WEEE

Battery

Disposal of Waste Electrical and Electronic Equipment and/or Battery by users in private households in the European Union.

This symbol on the product or on the packaging indicates that this can not be disposed of as household waste. You must dispose of your waste equipment and/or battery by handling it over to the applicable take-back scheme for the recycling of electrical and electronic equipment and/or battery. For more information about recycling of this equipment and/or battery, please contact your city office, the shop where you purchased the equipment or your household waste disposal service. The recycling of materials will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and environment.

Safety Warning and Notice

Before operating the camcorder, please make sure that you read and fully understand the content in this section. If you ignore and violate all safety warning notices indicated in this section, the camcorder warranty may be void. Meanwhile, not only the camcorder but also you and all other people and things around you may be severely damaged, injured, or even placed in danger of death.

For your safety

1. Do not attempt to charge any other battery with this camcorder.
2. Operate the power supply only on even surfaces, without any cover. Air circulation around the product must be always given. The maximum ambient temperature is 40 ºC.
3. Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.
4. Keep the camcorder and its accessories out of the reach of babies, toddlers, and children. In particular, small parts such as memory card and battery could be easily dismantled and swallowed by them.
5. Use only the original accessories to avoid possible risks to health and property, and thus meet all related legal regulations.
6. Do not dismantle the camcorder under any circumstances.
7. When using the flash, do not go too close to human eyes (particularly for babies, toddlers, and children) or animal eyes. Otherwise, when the flash fires, the light may cause damage to human eyes or irritate animals.
8. Batteries could explode, for instance. All batteries can cause property damage, injury or burns if a conductive material such as jewelry, keys or beaded chains touch exposed terminals. The material may complete an electrical circuit and become quite hot. Exercise care in handling any batteries, particularly

when placing it inside your pocket, purse, or other container with metal objects. Do not dispose of batteries in fire as they may explode.

9. To prevent electric shock, do not attempt to disassemble or repair your camcorder by yourself.

10. Some camcorder models accept non-rechargeable batteries. When using these batteries, do not charge them. Otherwise, dangers such as explosion and fire may occur.

11. The Digital Video Camera is not suitable for barcode photography.

Warranty

1. Warranty is void if damage or system failure occurred due to outside factors such as collision, fire, flood, dirt, sewage, earthquake, and other force majeure events as well as incorrect usage of electricity or use of non-original accessories.

2. It is the sole responsibility of the user if problems (such as data loss and system failure) occurred due to non-factory installed software, parts, and/or non-original accessories.

3. Do not change the camcorder. Any changes to the camcorder invalidate the warranty.

Taking care of your camcorder

1. Always keep the camcorder in a leather case or pouch for better protection against splashes, dust, and collision.

2. The only way of replacing the battery and the memory card is to open the Battery / Memory cover.

3. Dispose of unwanted batteries and camcorders as permitted by the laws in your countries.

4. Water may cause a fire or electric shock. Therefore, store your camcorder in a dry place.

5. If your camcorder becomes wet, wipe it with a dry cloth as soon as possible.

6. Salt or seawater may cause severe camcorder damage.
7. Do not drop, knock, or shake the camcorder. A rude behavior of using the camcorder may damage the internal electronic circuit board or deform the lens shape.
8. Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the camcorder.
9. Finger grease may be left on the camcorder lens and will result in unclear images or videos. To avoid this problem, be sure to clean the camcorder lens before taking pictures or recording videos. You should also clean the camcorder lens on a regular basis.
10. If the lens is dirty, use a lens brush or soft cloth to clean the lens.
11. Do not touch the lens with your fingers.
12. If a foreign substance or water gets in your camcorder, please turn the power off immediately and disconnect the batteries. Next, remove the foreign substance or water and send it to the maintenance center.
13. Whenever there is data in the external memory card, you should make a backup copy to a computer or disc. So, you can have a backup solution if data loss occurs.
14. All original accessories are designed only for use with this camcorder model you purchased. Do not use these accessories with other camcorder models or camcorders of other brands to avoid unpredictable danger or damage.
15. Before initial use of a memory card, always use the camcorder to format the card first.
16. Remember to slide the write-protect tab (if available) to the unlock position. Otherwise, all data (if any) on the memory card is protected and the card cannot be edited or formatted.

Operating environment

1. Do not use or store your camcorder in the environments listed below:
   - Direct sunlight
   - Dusty places
   - Next to an air conditioner, electric heater or other heat sources
   - In a closed car that is in direct sunlight
   - Unstable locations
2. Do not use your camcorder outdoors when it is raining or snowing.
3. Do not use your camcorder in or near water.
4. The camcorder operating temperature is between 0ºC ~ 40ºC (32ºF ~ 104ºF). It is normal for the operating time to be shortened when the temperature is low.
5. The capacity of your camcorder batteries will reduce each time it is charged/emptied.
6. Storage at too high or low temperatures will also result in a gradual capacity loss. As a result, the operating time of your camcorder may be considerably reduced.
7. It is normal for the camcorder to become warm during operation, because the camcorder casing can conduct heat.

1 Overall Introduction

Please read this chapter carefully to understand the features and functions of this Digital Video Camera. The description of this chapter also includes the description of system requirement, package contents, and hardware components.

1.1 System Requirements

This Digital Video Camera requires a unit of computer with the following specifications:

- Windows® Vista / XP / 2000 operating system or Mac OS 10.3 ~10.4
- A CPU of at least the equivalent of Intel® Pentium 4 2.8GHz
- At least 2GB of RAM
- Standard USB 1.1 connection port or higher
- At least 64MB of display card

Note: USB 1.1 allows you to transmit files to the host, but using USB 2.0 connection port could increase the transmission speed far faster.

1.2 Features

This Digital Video Camera provides many features and functions including:

- High resolution pixel camera (DV : maximum 1080P, DSC: maximum 16 million pixels)
- Touch screen
- Dual card slot (1 SD and 1 Micro SD)
- Slow motion Playback

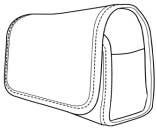
In addition, the device may also serve the function as a USB/SD card reader.

1.3 Accessories

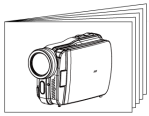
This package should contain the following items. In case there is any missing or damaged item, please contact your dealer immediately.

① Digital video camera

② Pouch



③ Quick guide



④ Software CD

⑤ HDMI cable

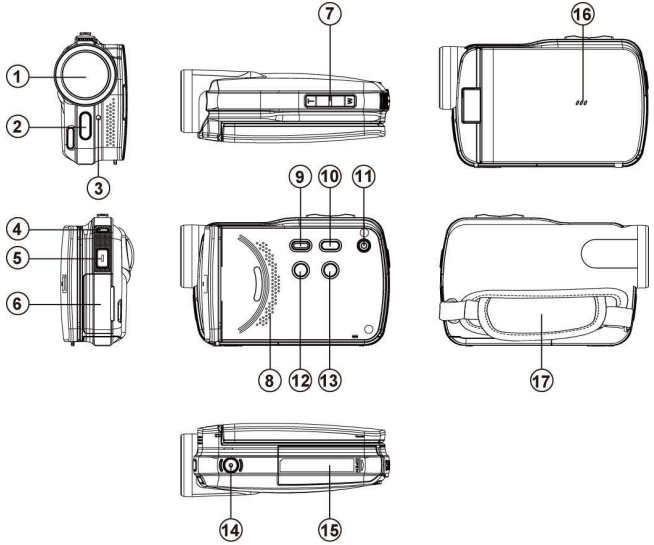
⑥ Video cable

⑦ USB cable

⑧ Lithium battery

⑨ Adaptor

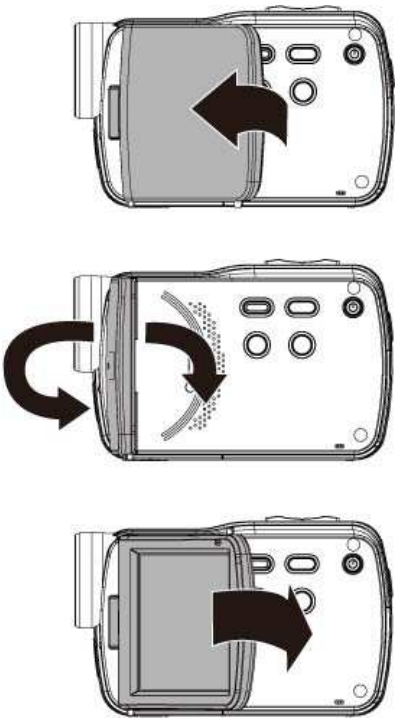
1.4 External View



1	Lens	10	Menu Button
2	LED Torch	11	Power
3	Self-timer Indicator	12	Light Button
4	Status Display	13	Mode Button
5	Recording Button	14	Tripod socket
6	USB/HD/TV/Audio Output	15	Battery / Memory Card Compartment
7	Zoom Button	16	Microphone
8	Speaker	17	Hand Strap
9	Playback Button		

1.5 Adjusting LCD Display

Before taking picture or recording movie clips, please rotate according to the illustrations below.

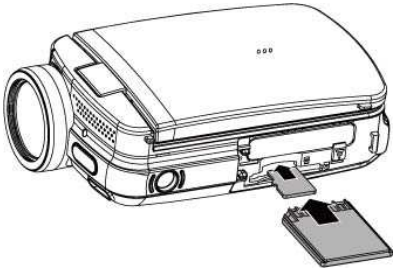


2 Getting Started

2.1 Inserting SD Card(s)

1. Open the battery cover.

2. Insert the SD card gently into the slot. Make sure the copper contact faces upwards.



SD card 1: ▸1 : SD card;
SD card 2: ▸2 : Micro SD card

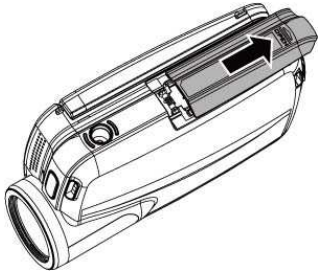
Note: Do not remove or insert SD cards when the power of the Digital Video Camera is on to avoid damaging files.

2.2 Loading the Battery

Please use only the battery provided or recommended by the manufacturer or dealer.

Note: Insert the battery correctly according to this description. Error in inserting the battery could result in damage to this Digital Video Camera and result in fire.

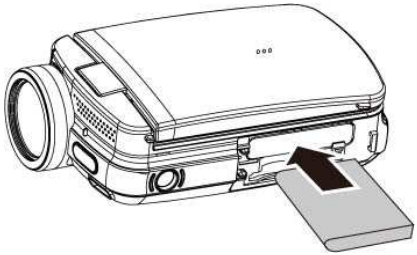
1. Open the battery cover.



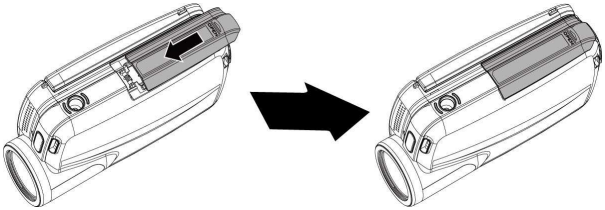
Battery Status Indicator:

	Battery full
	Battery half full
	Battery empty
	• Charging battery (A new battery should be charged at least 4 hours.) • The device power is supplied by DC input. (No battery inside.)

2. Insert the battery according to the illustration.



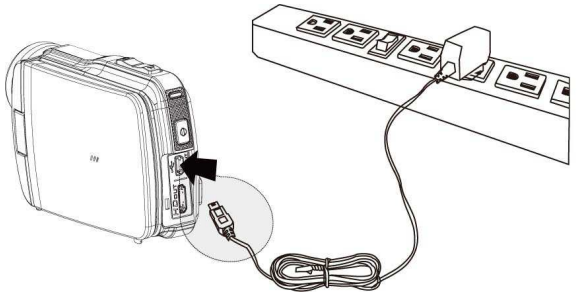
3. Close the battery cover.



2.3 Charging the Battery

You can use the adaptor attached to charge the lithium battery, whether the system is on or off

Insert the lithium battery into the Digital Video Camera and connect the camera to the cable of the adaptor. You can also charge the battery by a PC when the system is off.



2.4 The gestures of using the touch screen

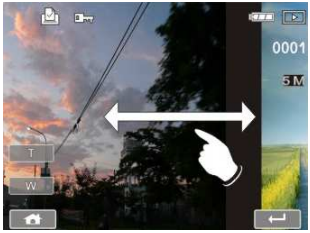
2.4.1 Single touch

The single touch function acts as a hotkey menu to adjust basic settings directly on the display.

1. Mode change (DV, DSC and Voice Recording)
2. Resolution change (Full HD, HD, WVGA, WEB or 16M, 8M, 5M, 3M)

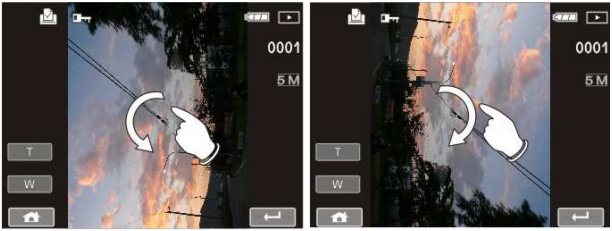
2.4.2 Slide

Slide right or left to view the previous file or the next file in Playback Mode.

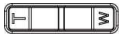


2.4.3 Rotate

Under Playback Mode, you can rotate the image by 90°step as shown below.



2.5 Buttons & Functions

Description	Button	Function
Power Button		Press the button to turn ON/OFF the power.
Menu Button		Press the button to display the main OSD menu.
LIGHT Button & MODE Button		- Press [MODE] to access different models of DV, DSC and Voice recording. - Press [LIGHT] to turn ON/OFF the LED Torch - [MENU] and [PLAY BACK], 2 buttons can be used for selection of the relevant functions. [LIGHT] is for left and [MODE] is for right.
Zoom Button		- This Digital Video Camera is equipped with 5X optical zoom and 4X digital zoom function. Please note that the 4X digital zoom is supported in 720P or lower video resolutions. - The [T] and [W] buttons can be used for function selection in the mode of [MENU]
Recording Button		Press the start/stop button to take the image, or to start/stop movie clip and voice recording.

Playback Button		Press the Playback button to enter Playback mode and playback the last file.

2.6 About LED Indicators

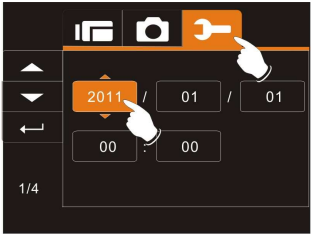
Below table describes the meaning of the camera LED indicators:

	Indicator Color	Definition
Power (Rear LED)	Green	Turning power on.
Recording (Front LED)	Red blinking	Recording
Self-timer	Red blinking	Start of Self-timer.

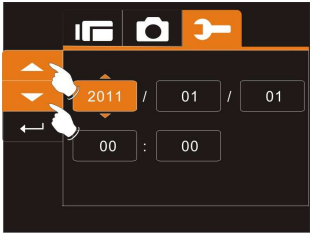
2.7 Initial settings before use

2.7.1 Setting Date and Time

1. Turn on the Digital Video Camera to set up the date and time for the first time. Set the date and time by press Zoom Button ( ) or touching the screen to select.



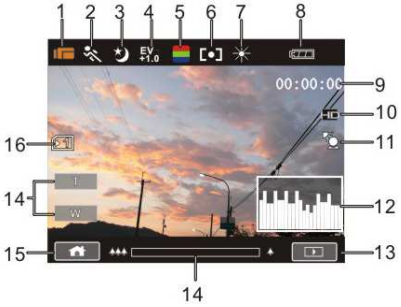
2. Press Mode Button ( ) to highlight each column. Use Zoom Button ( ) to adjust the value. Press Recording Button ( ) to store your changes, or touch the screen to adjust the date and time before pressing the Return Button ( ) to store the value and leave the setting.



3 LCD Display Information

3.1 In DV Mode

The following illustration shows the LCD display layout and icon description in the DV Mode ( ).



1		DV(Movie Clip) Mode icon
2		Motion Detection icon
3		Night Mode icon
4	EV +1.0	Exposure compensation icon
5		Color effect icon
6		Metering Mode icon

7		White balance icon
8		Battery status icon
9	**00:00:00**	Remaining recording time icon
10		Resolution Button
11		Backlight icon
12		Histogram icon
13		Playback Button
14		Digital Zoom Button
15		Menu Button
16		Memory Status icon 1 : SD card 1 icon; 2 : Micro SD card 2 icon INT : Internal memory icon (displayed when there is no SD card)

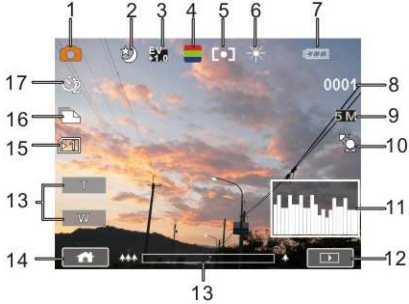
3.2 In Voice Recording Mode

The following illustration shows the LCD display layout and icon description in the Voice Recording Mode ( ).

1		Voice Recording Mode icon
2		Battery status icon
3	**00:00:00**	Recording time left icon
4		Playback Button
5		Menu Button
6		Memory Status icon ▶1 : SD card 1 icon; ▶2 : Micro SD card 2 icon INT : Internal memory icon (displayed when there is no SD card)

3.3 In DSC Mode

The following illustration shows the LCD display layout and icon description in the DSC Mode ( ).



1		DSC Mode icon
2		Night Mode icon
3		EV compensation icon
4		Effect icon
5		Metering Mode icon
6		White balance icon
7		Battery icon

8	**0001**	Number of pictures left icon
9	5 M	Resolution Button
10		Backlight icon
11		Histogram icon
12		Playback Button
13	T W	Digital zoom Button
14		Menu Button
15	INT	Memory Status icon 1 : SD card 1 icon; 2 : Micro SD card 2 icon INT : Internal memory icon (displayed when there is no SD card)
16		Burst icon
17		Self-timer icon

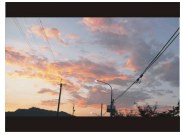
4 Using the Camera

4.1 Shooting a Movie Clip

1. Turn on the Digital Video Camera. Press the Mode Button ( ) or touch the screen to select the “DV Mode icon” to switch to DV mode.
2. Press the Recording Button ( ) to start moving recording. Press the Recording Button again ( ) to stop moving recording.
3. The Digital Video Camera will store the movie clip automatically.

DV Mode Icon

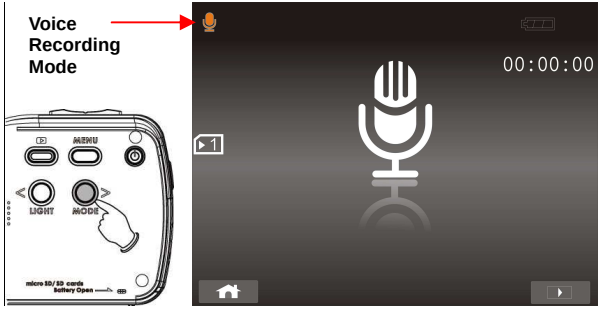
4. LCD screen ratio will be different depending on the setting of Movie Clip resolution. Please refer to the table shown below:

Video Resolution	Preview
FHD (1920 x 1080) HD (1280 x 720) WVGA (848 x 480)	16:9 ratio 
WEB (320 x 240)	4:3 ratio

4.2 Voice Recording Mode

1. Turn on the Digital Video Camera. Press the Mode Button ( ) or touch the screen to select the “Voice Recording Mode icon” to switch to Voice Recording Mode.

2. Press the Recording Button ( ) to start voice recording. Press the Recording Button again ( ) to stop voice recording.

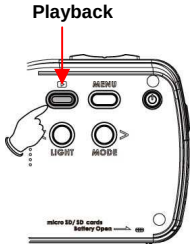


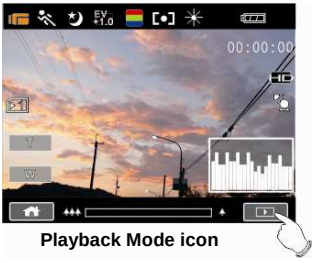
4.3 Movie clip / Voice Clip Playback

Files may not be played back.

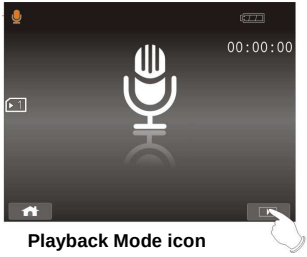
1. The folder/file name has been changed on your computer.
2. If the image file has been processed on computer or the image file is stored on other digital video camera after recording this digital video camera cannot guarantee the file can be played back normally.

1. In DV/Voice Recording Mode , pressing the Playback Button ( ) or touch the screen to select the Playback Mode icon, the last file stored will be displayed on the LCD screen.



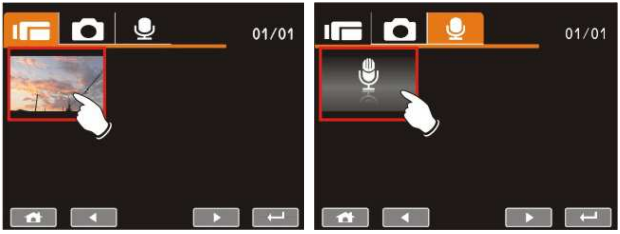


Playback Mode icon



Playback Mode icon

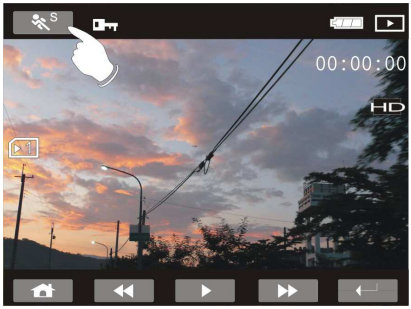
2. Press Zoom Button ( ) to select the file, and press Recording Button ( ) or touch the screen to select the file to playback.



3. To pause the Playback of file, press the Recording Button ( ) or touch the screen icon (/).

4. Press Playback Button ( ) again or touch the screen to select the Return Button ( ), the digital video camera will return to DV/Voice Recording Mode.

5. You can also playback the movie clip at a different speed by touching the screen icon ( ) ON/OFF.



Playback speed is as below when the Slow Motion is **"OFF"**:			Playback speed is as below when the Slow Motion is **"ON":**		
◀◀		▶▶	◀◀		▶▶
Rewind	**2X** play	Forward	Rewind	**1/2X** play	Forward
Rewind	**4X** play	Forward	Rewind	**1/4X** play	Forward
Rewind	**8X** play	Forward	Rewind	**1/8X** play	Forward
Rewind	**16X** play	Forward	Rewind	**1/16X** play	Forward

4.4 Shooting / Playback images

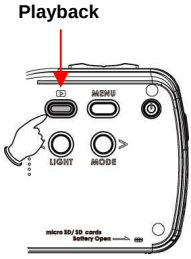
4.4.1 Taking a picture

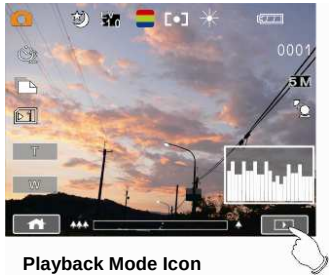
1. Turn on the Digital Video Camera. Press the Mode Button (MODE) or touch the screen to select the “DSC Mode icon” to switch to DSC Mode.

2. Press the Recording Button ( ) to capture images. The Digital Video Camera will store the picture automatically.

4.4.2 Images Playback

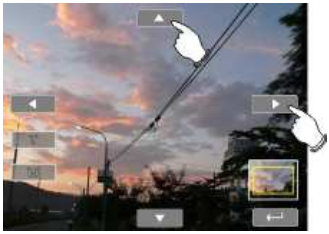
1. In DSC Mode, press Playback Button ( ) or touch the screen to select the Playback Button icon to display the images on the LCD screen.



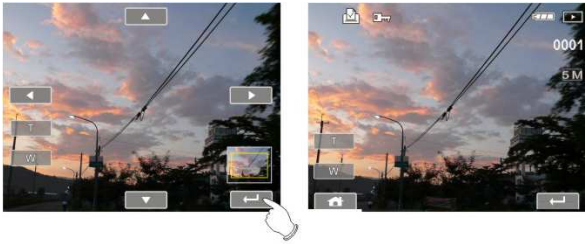


2. Press Zoom Button ( ) will select a file. Pressing Recording Button ( ) or touch the screen to select the file to playback.

3. Press Zoom Button ( ) or touch the screen to select the Zoom Button (T / W) will zoom in or zoom out the picture. Press the Mode Button (LIGHT MODE) or touch the screen o select the 4-way Button to move the image.



4. Press Zoom Button ( ) or touch the Return Button ( ) to return to full screen for viewing images.

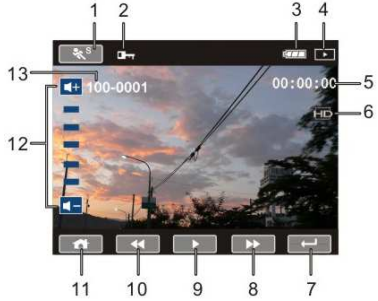


5. Press the Playback Button ( ) again or touch the screen to select the Return Button ( ) will restore to DSC Mode.

5 LCD Display Information

5.1 DV Playback Mode

Please refer to the following table regarding the description of each icon and symbol.



1		Slow Motion Playback Button
2		File Protect icon
3		Battery status icon
4		Playback Mode icon
5	**00:00:00**	Length of each Movie clip icon
6		Resolution icon
7		Return Button
8		Fast forward Playback Button

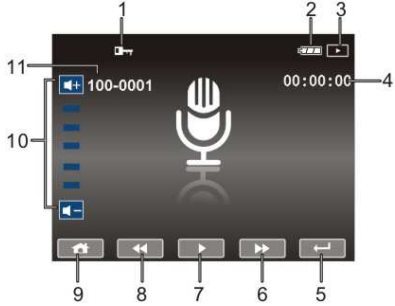
9		Playback/Pause Button
10		Fast rewind Playback Button
11		Menu Button
12		Sound volume Button
13	**100-0001**	Folder and file number

Notes:

1. **Maximum capacity of each recorded file is 4GB.**
2. **Setting of high resolution will result in larger file and therefore shorter recording time.**

5.2 Voice Recording Playback Mode

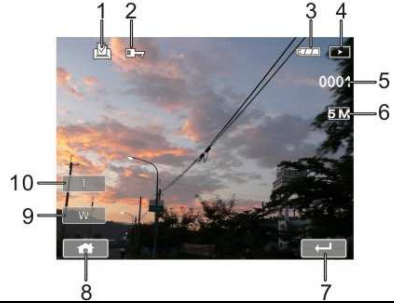
Please refer to the following table regarding the description of each icon and symbol.



1		File Protect icon
2		Battery status icon
3		Playback Mode icon
4	**00:00:00**	Length of each voice recording icon
5		Return Button
6		Fast forward Playback Button
7		Playback/Pause Button
8		Fast rewind Playback Button
9		Menu Button
10		Sound volume Button
11	**100-0001**	Folder and file number

5.3 DSC Playback Mode

Please refer to the following illustration to familiarize yourself with icons and symbols of DSC Playback Mode.



1		DPOF (Digital Print Order Format) icon
2		File Protect icon
3		Battery status icon
4		Image Playback Mode icon
5	**0001**	Number of pictures left icon
6	5 M	Resolution icon
7		Return Button
8		Menu Button
9	W	Zoom- Out Button
10	T	Zoom- In Button

6 Menu Mode

When a menu screen is displayed, the Menu button is used to move through the highlighted items in the submenu or to select a menu item.

6.1 Menu options of DV Mode

Set your Digital Video Camera to DV Mode and press the MENU Button (MENU) to show the DV options menu.

6.1.1 Movie clip Resolution

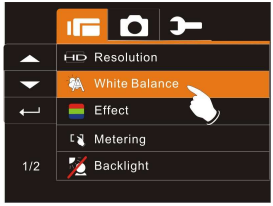
1. Turn on the Digital Video Camera and make sure it is in the DV Mode.
2. Press Menu Button (MENU) and press Zoom Button (W T) to highlight the Resolution item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button (W T) to select FHD, HD, WVGA or WEB. Press the Recording Button ( ) to confirm; or touch the screen to select the item.

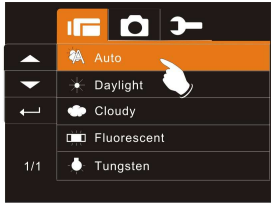
FHD	1920 x 1080
HD	1280 x 720
WVGA	848 x 480
WEB	320 x 240

Note:	1. When setting to FHD, HD or WVGA resolution, the LCD display aspect ratio is 16:9. 2. When setting to WEB video resolution, the LCD display aspect ratio is 4:3.

6.1.2 White Balance

1. Turn on the Digital Video Camera and make sure it is in the DV Mode.
2. Press Menu Button (MENU) and press Zoom Button ( ) to highlight the White Balance item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select Auto, Daylight, Cloudy, Fluorescent or Tungsten. Press the Recording Button ( ) to confirm; or touch the screen to select the item.



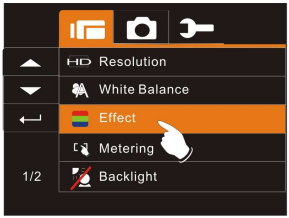


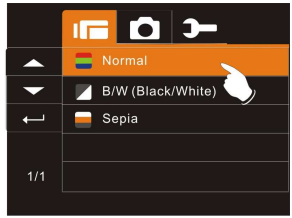
Auto	The Digital Video Camera automatically adjusts white balance.
Daylight	The setting is suitable for outdoor recording in daylight.
Cloudy	The setting is suitable for recording in cloudy or shady environments.
Fluorescent	The setting is suitable for indoor with fluorescent lamp lighting, or environments with high color temperature.
Tungsten	The setting is suitable for indoor with incandescent lamp light, or environments with low color temperature.

6.1.3 Effect

1. Turn on the Digital Video Camera and make sure it is in the DV Mode.
2. Press Menu Button (

) and press Zoom Button ( ) to highlight the Effect item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select Normal, B/W or Sepia. Press the Recording Button ( ) to confirm; or touch the screen to select the item.

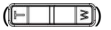




Normal	Make recordings in nature color
B&W	Make recordings in B&W (Black and White) color
Sepia	Make recordings in Sepia-toned color

6.1.4 Metering

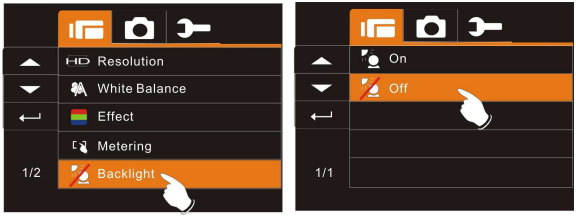
1. Turn on the Digital Video Camera and make sure it is in the DV Mode.
2. Press Menu Button (

) and press Zoom Button () to highlight the Metering item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select Spot, Center or Touch AE. Press the Recording Button ( ) to confirm; or touch the screen to select the item.

Spot	This setting is to ensure correct exposure for the object even if the background is very bright or very dark.
Center	Use this setting to preserve background details while letting lighting conditions at the center of the frame define exposure.
Touch AE	Touch the object to make it with suitable light.

6.1.5 Backlight

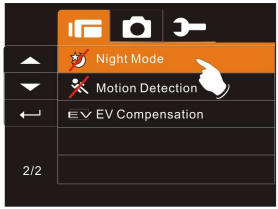
1. Turn on the Digital Video Camera and make sure it is in the DV Mode.
2. Press Menu Button (MENU) and press Zoom Button ( ) to highlight the Backlight item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select On or Off. Press the Recording Button ( ) to confirm; or touch the screen to select the item.

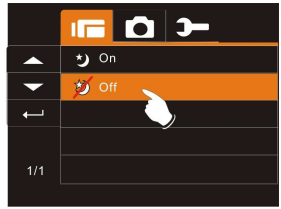


6.1.6 Night Mode

1. Turn on the Digital Video Camera and make sure it is in the DV Mode.
2. Press Menu Button (

) and press Zoom Button ( ) to highlight the Night Mode item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select On or Off. Press the Recording Button ( ) to confirm; or touch the screen to select the item.

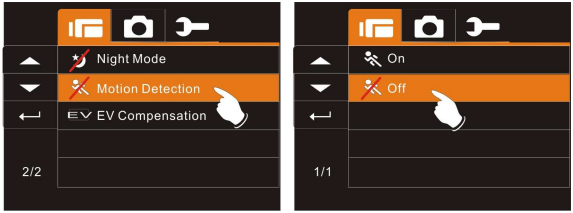




6.1.7 Motion Detection

When the Motion Detection is turned on, it is possible to undergo motion detection recording without the need to operate beside the camera. When motion is detected, the camera will start recording. When the image stops moving, the camera will stop recording.

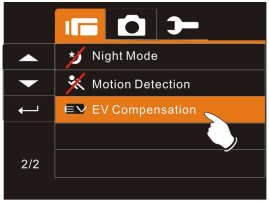
1. Turn on the Digital Video Camera and make sure it is in the DV Mode.
2. Press Menu Button (MENU) and press Zoom Button ( ) to highlight the Motion Detection item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select On or Off. Press the Recording Button ( ) to confirm; or touch the screen to select the item.



6.1.8 EV Compensation

You can adjust the value of the exposure compensation which is ranged from -2.0EV to +2.0EV (at 0.5EV increment). The higher the EV value, the brighter the image will be.

1. Turn on the Digital Video Camera and make sure it is in the DV Mode.
2. Press Menu Button (MENU) and press Zoom Button ( ) to highlight the EV Compensation item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Mode Button (LIGHT MODE) to select left/right will increase or decrease EV value by steps. Press the Recording Button ( ) to confirm; or touch the screen to select the item.

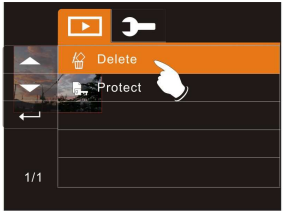


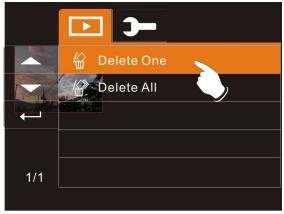
6.2 Menu options of DV/Voice Playback

When in DV/Voice Playback Mode, press the Menu Button (MENU) to show the Movie clip options menu.

6.2.1 Delete

1. Turn on the Digital Video Camera and make sure it is in the DV/Voice Playback Mode.
2. Select the file to be deleted and press the Menu Button (MENU) to enter Menu. Press Zoom Button ( ) to highlight the Delete item, or touch the screen and select on the file to be deleted.
3. Press Zoom Button ( ) or touch the screen to select Delete One or Delete All, and press Recording Button ( ) to delete file(s).





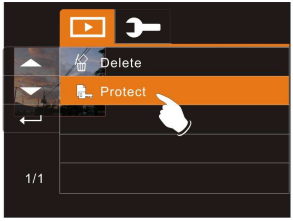
4. Touch the screen to select “Yes” or “No” to delete file(s).

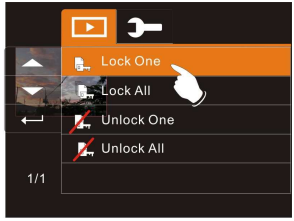
Delete One	Delete the current file
Delete All	Delete all files stored in the Digital Video Camera

Note: The file cannot be recovered once it is deleted. Therefore, please make sure you have backed up the file before Delete. Protect files cannot be deleted. Before deleting, you must unlock it

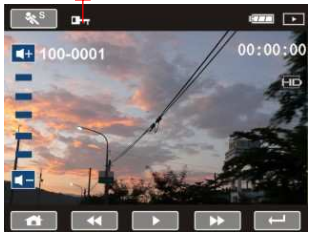
6.2.2 Protect

1. Turn on the Digital Video Camera and make sure it is in the DV/Voice Playback Mode.
2. Press Menu Button ( ) and press Zoom Button ( ) to highlight the Protect item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Display the lock icon to indicate the file is being protected.





Protect Lock



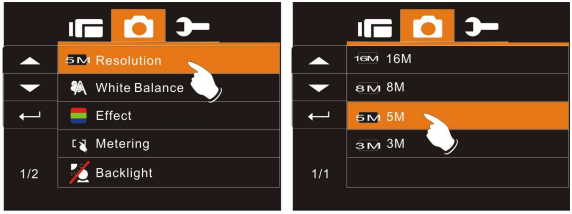
Note: To unlock the file from Protect, repeat steps stated above. When the Protection is relieved from Protect mode, the locked icon will disappear.

6.3 Menu options of DSC Mode

When in DSC Mode, press Menu Button (MENU) to display DSC Mode option Menu.

6.3.1 Still Image Resolution

1. Turn on the Digital Video Camera and make sure it is in the DSC Mode.
2. Press Menu Button (MENU) and press Zoom Button (W/T) to highlight the Resolution item. Press the Recording Button (●) to display submenu; or touch the screen to select the item.
3. Press Zoom Button (W/T) to select 16M, 8M, 5M or 3M. Press the Recording Button (●) to confirm; or touch the screen to select the item.

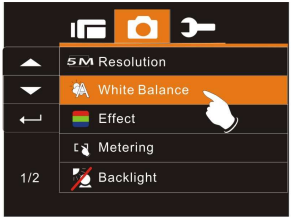


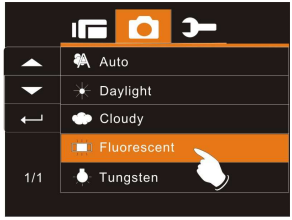
16M 16M	4608 x 3456 pixels (Interpolation)
8M 8M	3200 x 2400 pixels (Interpolation)
5M 5M	2592 x 1944 pixels
3M 3M	2048 x 1536 pixels

6.3.2 White Balance

1. Turn on the Digital Video Camera and make sure it is in the DSC Mode.
2. Press Menu Button (

) and press Zoom Button ( ) to highlight the White Balance item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select Auto, Daylight, Cloudy, Fluorescent or Tungsten. Press the Recording Button ( ) to confirm; or touch the screen to select the item.



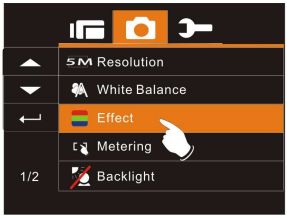


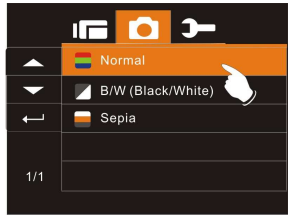
6.3.3 Effect

This digital video camera can record normal color image, black and white image, or image with sepia effect.

1. Turn on the Digital Video Camera and make sure it is in the DSC Mode.
2. Press Menu Button (

) and press Zoom Button ( ) to highlight the Effect item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select Normal, B/W or Sepia. Press the Recording Button ( ) to confirm; or touch the screen to select the item.

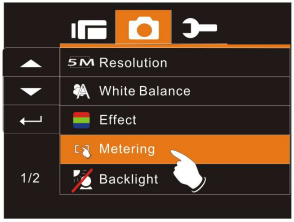




6.3.4 Metering

1. Turn on the Digital Video Camera and make sure it is in the DSC Mode.
2. Press Menu Button (

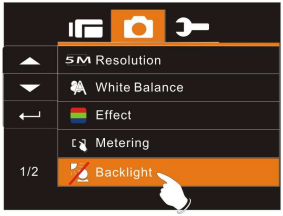
) and press Zoom Button ( ) to highlight the Metering item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select Spot, Center or Touch AE. Press the Recording Button ( ) to confirm; or touch the screen to select the item.

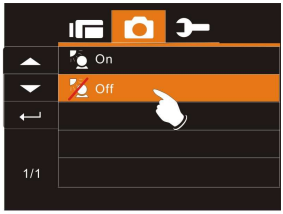


6.3.5 Backlight

1. Turn on the Digital Video Camera and make sure it is in the DSC Mode.
2. Press Menu Button (

) and press Zoom Button ( ) to highlight the Backlight item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select On or Off. Press the Recording Button ( ) to confirm; or touch the screen to select the item.





6.3.6 Night Mode

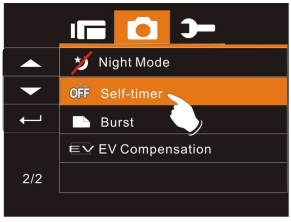
1. Turn on the Digital Video Camera and make sure it is in the DSC Mode.
2. Press Menu Button (

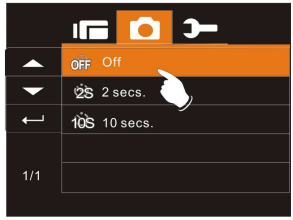
) and press Zoom Button ( ) to highlight the Night Mode item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select On or Off. Press the Recording Button ( ) to confirm; or touch the screen to select the item.

6.3.7 Self-timer

1. Turn on the Digital Video Camera and make sure it is in the DSC Mode.
2. Press Menu Button (

) and press Zoom Button ( ) to highlight the Self-timer item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select Off, 2 secs. or 10 secs.. Press the Recording Button ( ) to confirm; or touch the screen to select the item.





With 2 secs. Self-timer:

The image will be taken 2 seconds after the shutter is released.

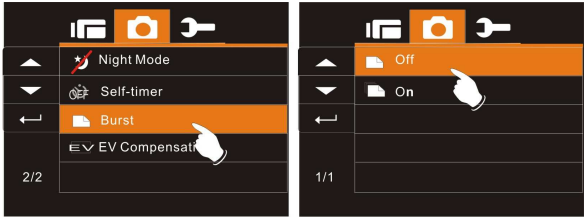
With 10 secs. Self-timer:

The image will be taken 10 seconds after the shutter is released.

6.3.8 Burst

You can continuously shooting three pictures by this function, started by pressing the Recording Button ( ) and ending automatically by taken three pictures.

1. Turn on the Digital Video Camera and make sure it is in the DSC Mode.
2. Press Menu Button ( ) and press Zoom Button ( ) to highlight the Burst item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select Off, 2 secs. or 10 secs.. Press the Recording Button ( ) to confirm; or touch the screen to select the item.



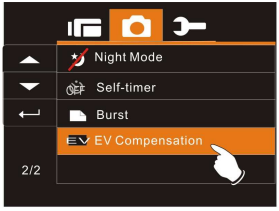
6.3.9 EV compensation

You can adjust the value of the exposure compensation which is ranged from -2.0EV to +2.0EV (at 0.5EV increment). The higher the EV value, the brighter the image will be.

1. Turn on the Digital Video Camera and make sure it is in the DSC Mode.
2. Press Menu Button (

) and press Zoom Button ( ) to highlight the EV Compression item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Using Mode Button (

) to select left/right will increase or decrease EV value by steps. Press the Recording Button ( ) to confirm; or touch the screen to select the item.

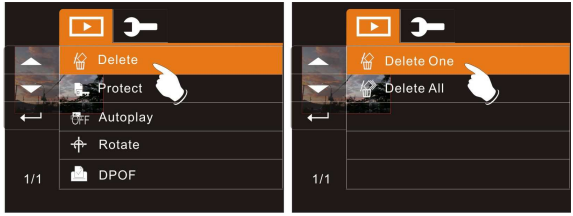


6.4 Menus of DSC Playback

6.4.1 Delete

1. Turn on the Digital Video Camera and make sure it is in the Playback Mode.
2. Select the file to be deleted, press Menu Button (

) and press Zoom Button ( ) to highlight the Delete item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select Delete one or Delete All. Press the Recording Button ( ) to confirm; or touch the screen to select the item.

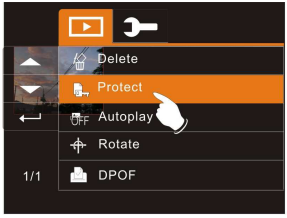


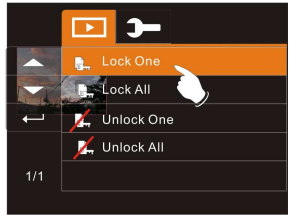
4. Press Zoom Button ( ) to select “Yes” or “No” to delete file(s), or touch the screen to select the item.

Note: The files cannot be recovered once deleted. Therefore, please make sure you have a backup file before delete. The protect files will not be able to delete. Before delete of Protected file, you must unlock the file.

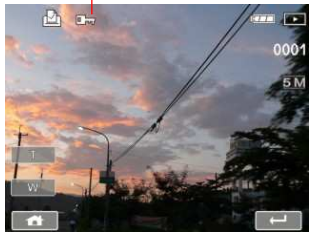
6.4.2 Protect

1. Turn on the Digital Video Camera and make sure it is in the Playback Mode.
2. Press Menu Button (MENU) and press Zoom Button ( ) to highlight the Protect item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select Lock One, Lock All, Unlock One or Unlock All. Press the Recording Button ( ) to confirm; or touch the screen to select the item. The Locked icon will be displayed to indicate the file is Protected.





Protect Lock

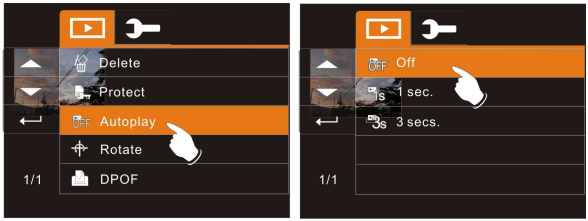


Note: Repeat above steps to unlock the file. When the file is unlocked, the locked icon will disappear.

6.4.3 Autoplay

This digital video camera includes film Autoplay function for playing back each image at a fixed interval.

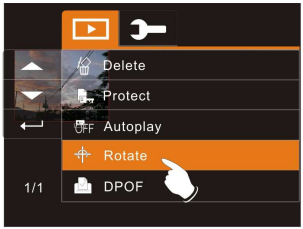
1. Turn on the Digital Video Camera and make sure it is in the Playback Mode.
2. Press Menu Button (MENU) and press Zoom Button (W T) to highlight the Autoplay item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button (W T) to select Off, 1 sec., or 3 secs.. Press the Recording Button ( ) to confirm; or touch the screen to select the item. The images will be displayed automatically.

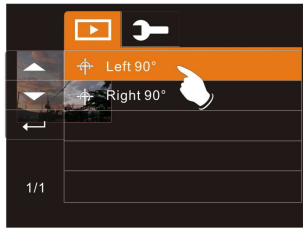


6.4.4 Rotate

1. Turn on the Digital Video Camera and make sure it is in the Playback Mode.
2. Press Menu Button (

) and press Zoom Button ( ) to highlight the Rotate item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select Left 90° or Right 90°. Press the Recording Button ( ) to confirm; or touch the screen to select the item.



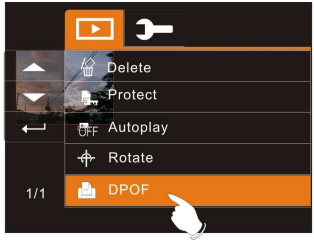


6.4.5 DPOF

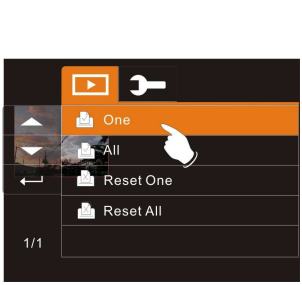
Use DPOF (Digital Print Order Format) function to indicate the printing information stored in the memory card.

1. Turn on the the Digital Video Camera and make sure it is in the Playback Mode.
2. Press Menu Button (

) and press Zoom Button ( ) to highlight the DPOF item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.



3. Press Zoom Button ( ) to select One, All, Reset One or Reset All. Press the Recording Button ( ) to confirm; or touch the screen to select the item. The DPOF icon will be shown to indicate the files that are ordered for printing.



Note: 1. A memory card is required for the DPOF function.
2. If DPOF is set, the pictures to be printed are ordered to print.

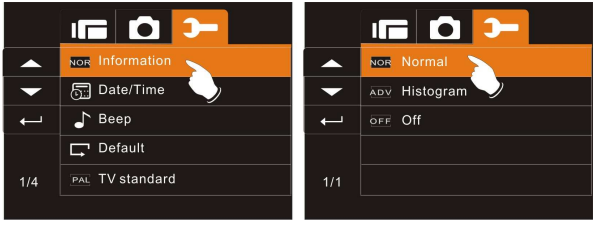
6.5 Setting Menu

Setting Menu can be used to select all kinds of the Digital Video Camera settings.

6.5.1 Information

This function can be used to display information on the LCD screen to help you capture the best movie and image clips.

1. Turn on the Digital Video Camera and press Menu Button (MENU), and switch to SET Mode.
2. Press Zoom Button (W T) to highlight Information item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button (W T) to select Normal, Histogram, or Off. Press the Recording Button ( ) to confirm; or touch the screen to select the item.



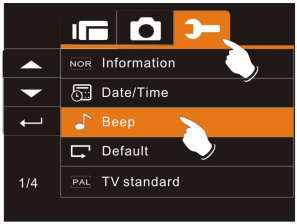
6.5.2 Date / Time

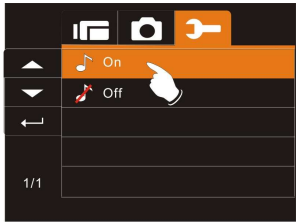
Please refer to 2.7.1 the Setting of Date and time.

6.5.3 Beep

1. Turn on the Digital Video Camera and press Menu Button (

), and switch to SET Mode.
2. Press Zoom Button ( ) to highlight Beep item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select On or Off. Press the Recording Button ( ) to confirm; or touch the screen to select the item.

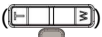


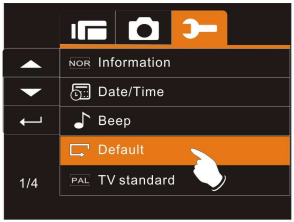


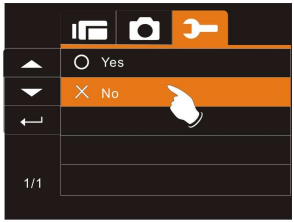
6.5.4 Default

Use this function to reset all settings to default settings.

1. Turn on the Digital Video Camera and press Menu Button (

), and switch to SET Mode.
2. Press Zoom Button () to highlight Default item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select “O” Yes or “X” No. Press the Recording Button ( ) to confirm; or touch the screen to select the item.

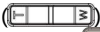


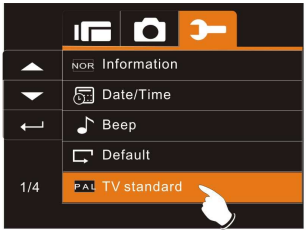


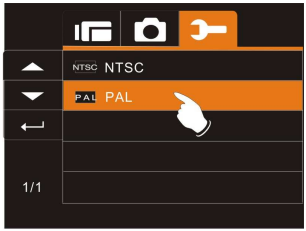
6.5.5 TV standard

Use the TV standard to set the TV system for your area.

1. Turn on the Digital Video Camera and press Menu Button (

), and switch to SET Mode.
2. Press Zoom Button () to highlight TV standard item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select NTSC or PAL. Press the Recording Button ( ) to confirm; or touch the screen to select the item.



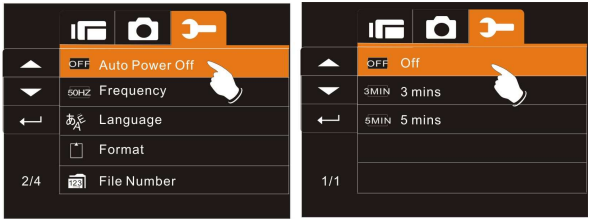


TV out standard setting reference	
NTSC NTSC	USA, Canada, Japan, Korea, Taiwan, Mexico
PAL PAL	Australia, Austria, Belgium, China, Denmark, Finland, Germany, UK, Italy, Kuwait, Malaysia, New Zealand, Singapore, Spain, Sweden, Switzerland, Thailand, Norway

6.5.6 Auto Power Off

This function can be used to turn off the Digital Video Camera automatically after not using it for a period of time.

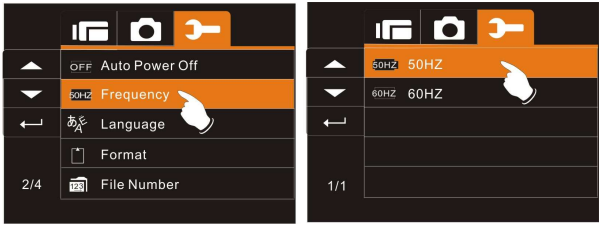
1. Turn on the Digital Video Camera and press Menu Button (MENU), and switch to SET Mode.
2. Press Zoom Button ( ) to highlight Auto Power Off item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select Off, 3 mins, or 5 mins. Press the Recording Button ( ) to confirm; or touch the screen to select the item.



6.5.7 Frequency

Use the Frequency option to set the frequency system for your area.

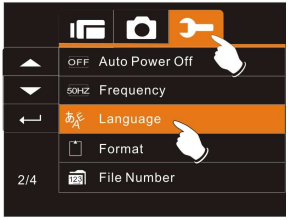
1. Turn on the Digital Video Camera and press Menu Button (MENU), and switch to SET Mode.
2. Press Zoom Button ( ) to highlight Frequency item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select 50HZ or 60HZ. Press the Recording Button ( ) to confirm; or touch the screen to select the item.



Frequency setting reference:	
50HZ 50HZ	UK, Germany, Spain, Italy, France, Netherlands, Portugal, Russia, China, Japan
60HZ 60HZ	USA, Taiwan, Korea, Japan

6.5.8 Language

1. Turn on the Digital Video Camera and press Menu Button (MENU), and switch to SET Mode.
2. Press Zoom Button ( ) to highlight Language item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.

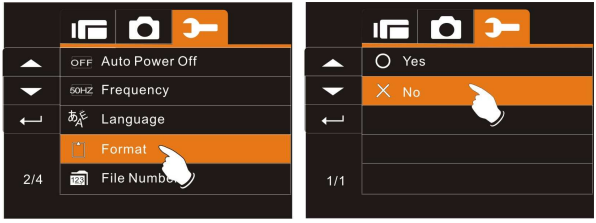


3. Press Zoom Button ( ) to select the following languages: English, German, French, Italian, Japanese, Spanish, Portuguese, Traditional Chinese, Simplified Chinese, Turkish, Russian, Thai, Arabian or Korean. Press the Recording Button ( ) to confirm; or touch the screen to select the item.

6.5.9 Format

This function allows you to format the memory card or the built-in memory.

1. Turn on the Digital Video Camera and press Menu Button (MENU), and switch to SET Mode.
2. Press Zoom Button ( ) to highlight Format item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select “O” Yes or “X” No. Press the Recording Button ( ) to confirm; or touch the screen to select the item.



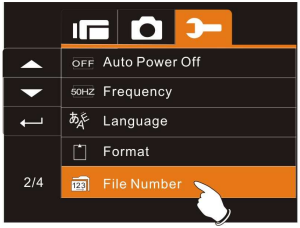
Note: All the data stored in the memory card or flash memory will be deleted after formatting.

6.5.10 File Number(Default: Series)

This setting allows you to name the files. If “Series” is selected, the file name will follow the latest stored file consecutively. If “Reset” is selected, the next file name will start from 0001 even after formatting, deleting or inserting a new memory card.

1. Turn on the Digital Video Camera and press Menu Button (

), and switch to SET Mode.
2. Press Zoom Button ( ) to highlight File Number item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select Series or Reset. Press the Recording Button ( ) to confirm; or touch the screen to select the item.

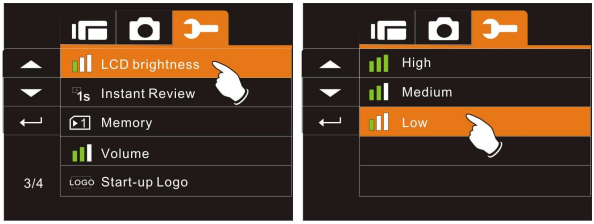


6.5.11 LCD brightness

This function can be used to adjust the brightness of the screen.

1. Turn on the Digital Video Camera and press Menu Button (

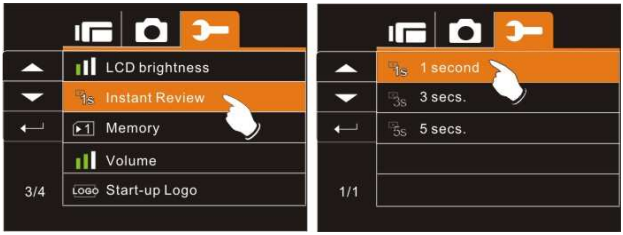
), and switch to SET Mode.
2. Press Zoom Button ( ) to highlight LCD brightness item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select High, Medium, or Low. Press the Recording Button ( ) to confirm; or touch the screen to select the item.



6.5.12 Instant Review

This function can be used to instantly browse the files after taking the picture.

1. Turn on the Digital Video Camera and press Menu Button (MENU), and switch to SET Mode.
2. Press Zoom Button ( ) to highlight Instant Review item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select 1 second, 3 secs., or 5 secs.. Press the Recording Button ( ) to confirm; or touch the screen to select the item.

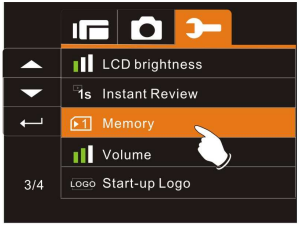


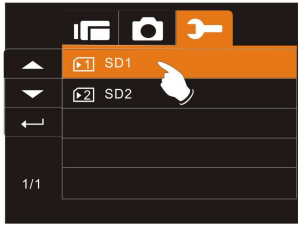
6.5.13 Memory

Use this function to select data storage location.

1. Turn on the Digital Video Camera and press Menu Button (

), and switch to SET Mode.
2. Press Zoom Button ( ) to highlight Memory item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select SD1, or SD2. Press the Recording Button ( ) to confirm; or touch the screen to select the item.





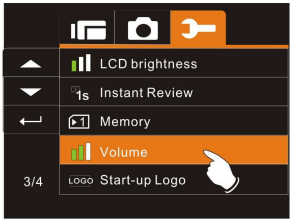
Note: When inserting SD card, slot 1 or slot 2 can be selected for storage. If the camera does not have SD card, the file will be stored in the build-in storage.

6.5.14 Volume

Use this function to adjust the sound volume.

1. Turn on the Digital Video Camera and press Menu Button (

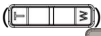
), and switch to SET Mode.
2. Press Zoom Button ( ) to highlight Volume item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select High, Medium, or Low. Press the Recording Button ( ) to confirm; or touch the screen to select the item.

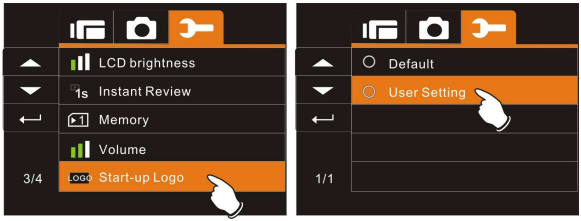


6.5.15 Start-up LOGO

Use this function to the image that is displayed on the LCD when the digital camcorder is turned on.

1. Turn on the Digital Video Camera and press Menu Button (

), and switch to SET Mode.
2. Press Zoom Button () to highlight Star-up Logo item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select Default or User Setting. Press the Recording Button ( ) to confirm; or touch the screen to select the item.



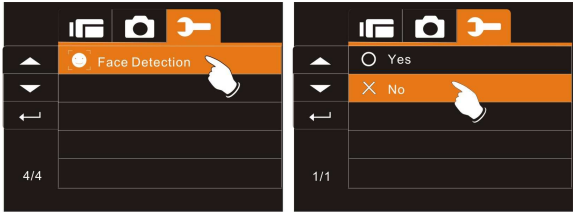
4. Use the "User Setting" to select the image you intend to use as Start-up Logo. Press Zoon Button ( ) to select the image you intend to use as Start-up Logo. Press the Recording Button ( ) to confirm; or touch the screen to select the item.

5. Turn the camera off and on again. DV will use the preset image as Start-up Logo.
6. If you want to cancel the Start-up Logo of User Setting, please enter the Start-up Logo item, and select the Default item, the camera will return to the preset Start-up Logo.

6.5.16 Face Detection

You can use the Face Detection function to detect faces in a scene automatically during a photo shoot

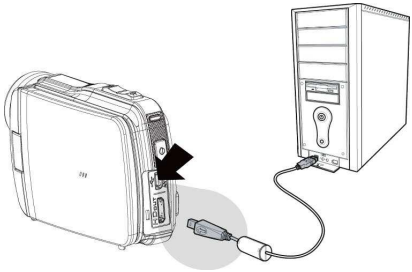
1. Turn on the Digital Video Camera and press Menu Button (MENU), and switch to SET Mode.
2. Press Zoom Button ( ) to highlight Face Detection item. Press the Recording Button ( ) to display submenu; or touch the screen to select the item.
3. Press Zoom Button ( ) to select “O” Yes or “X” No. Press the Recording Button ( ) to confirm; or touch the screen to select the item.



7 PC and TV Connection

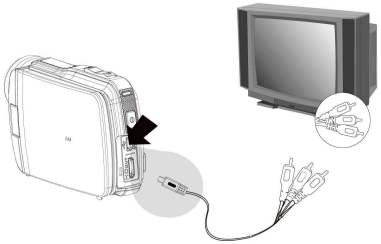
7.1 Connecting to the Computer

As shown in the illustration, use the USB cable provided to connect the Digital Video Camera to a PC for file transmission.



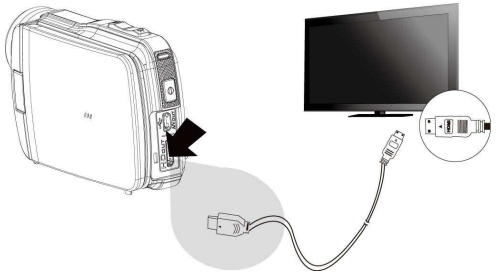
7.2 Connecting to a Standard TV

As shown in the illustration, use the video cable to connect the Digital Video Camera to a standard TV.



7.3 Connecting to a HD TV

As shown in the illustration, use the HDMI cable provided to connect the Digital Video Camera to a HD TV for high resolution picture display.

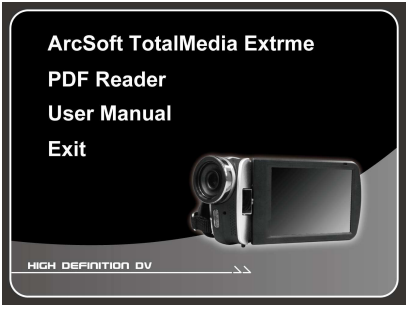


Note：Some TV could not recognize this image format (1080p, 30fps). Please confirm the resolution of the connected TV.

8 Installing the Software

1. Place the CD ROM attached into the CD player.
2. If the CD is not executed automatically, please use the root menu of the computer to locate the **Install_CD.exe** file in the CD root menu.

   The following screen will be displayed.



3. Press the Menu item and follow the Installation process and follow the instructions on screen.

9 Editing Software

ArcSoft Total Media Extreme(TME) ™ manages your media for you, and gives you tons of fun and exciting ways to create and share projects featuring your photo, video, and music files. Edit, enhance and add creative effects to your photos. You can

- Create your own movies or photo slide shows complete with soundtrack.
- Upload your files easily to YouTube™!
- Or share them through simple email attachments or popular photo printing.
- You can go to http://www.arcsoft.com/ for more information.

10 Appendix

Specifications

Image sensor	1/3.2 inch. 5 mega pixels CMOS sensor		
Effective pixels	5 Megapixel (2592X1944)		
Storage media	Support SD / Micro SD card and SDHC card (32GB)		
ISO Equipment	Auto		
Color effect	Normal / BW / Sepia		
Lens	f = 5-25 mm; F=3.5-3.7 (f = 38-190 mm, 35mm equivalent)		
Focus range	Wide: 10cm~Infinity Tele: 100cm~ Infinity		
Still image	Format：JPEG (DPOF, EXIF) Resolution: 3MP, 5MP, 8MP (Interpolation), 16M (Interpolation)		
Recording method (fps)	Resolution	NTSC	PAL
	Full HD (1920 x 1080)	30fps	30fps
	HD (1280x720)	30fps	30fps
	WVGA (848x480)	60fps	30fps
	WEB (320x240)	30fps	30fps
	Format: H.264 (MOV)		
TV output	NTSC/PAL		
Zoom	Optical Zoom: 5x ; Digital Zoom: 4x Static image playback: 8x digital zoom (depending on the size of the image)		

Audio	Sound: ADPCM Video: MOV
TFT screen	3.0” Touch Panel screen
LED Flashlight	Range：Below 1.0m DV: On / Off DSC: On / Off
White balance	Auto / Daylight / Cloudy / Fluorescent / Tungsten
Exposure	-2.0 EV~+2.0 EV (0.5EV / step)
Self-Timer	Off, 2 seconds, 10 seconds
Interface	Camera: USB 2.0 (high-speed) Mass storage high disk: USB 2.0(high-speed), MIC input, HDMI, USB DC IN
Shutter	Electronic shutter 1/2 ~1/4000 sec
Auto Power Off	Off, 3 minutes, 5 minutes
Power Source	NP-60 Lithium battery (1050mAh)
Dimensions	106 (L) x 65 (H) x 37 (W) mm
Weight	About 170g (without battery and SD card)

Troubleshooting

Problem	Possible Cause	Solution
Can not turn on the power of Digital Video Camera.	1. Batteries are not inserted correctly. 2. Batteries are exhausted.	1. Please insert batteries correctly. 2. Replace the batteries.
Camera shutdown suddenly.	1. Power saving mode already activated. 2. Battery exhausted.	1. Please turn on the power again. 2. Replace the batteries.
Pictures are not stored in the memory.	Power off before storing the images.	Please change to new batteries when the battery indicator turns to red color.
Camera shutdown when using Self-timer shooting picture.	Batteries in camera are exhausted.	Change new batteries.
Images are out of focus	Object exceeds the range of focus.	Please take the picture within the focusing range and select normal.
Unable to use the external memory card.	1. Memory card is Protected. 2. Memory card contains non-DCF images taken by other cameras.	1. Unlock the memory card. 2. Reformat the memory card. Please make sure to backup the file before reformatting memory card.

All Buttons can not work or camera hangs.	Short circuit occurred when connecting the camera to other device.	Take out batteries in the camera and re-insert again.

User's Manual